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ABSTRACT

A study compared the reading achievement of first grade students who attended half-day kindergarten to that of students who attended full-day kindergarten. Subjects, 67 students in urban Newark, New Jersey, who had attended half-day and 66 students who had attended full-day kindergarten, were given the first grade Comprehensive Tests of Basic Skills (CTBS) after 8 months in the first grade. The total reading scores for the two groups were then compared. Results indicated that students who had attended full-day kindergarten scored significantly higher than students who had attended half-day kindergarten. (One table of data is included; 21 references and an appendix of data are attached.) (RS)

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Half-Day Kindergarten Versus All-Day Kindergarten And Its' Effect on First-Grade Reading Achievement

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By

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ABSTRACT

This study, conducted in the Central Ward of Newark, New Jersey's Public Schools, compared standardized test scores of two different groups of first-grade students. The first group of sixty-seven participated in a half-day kindergarten program. The second group of sixty-six students, whose scores were examined, participated in an all-day kindergarten program. It was hypothesized that children in a half-day program would not demonstrate greater reading achievement in the first grade when compared to those who have been involved in an all-day kindergarten program.

An analysis of the data indicated that the scores of the half-day kindergarten were lower than the scores of the all-day sample. The difference in the scores were statistically significant. The findings of this study support the hypothesis.

ACKNOWLEDGEMENTS

I would like to express my appreciation to my family, especially my husband, Purvis, for their patience, understanding and support while I worked on this thesis.

A special thanks to Dr. Mazurkiewicz for his assistance and guidance in every step of the way.

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"Over the expressway and through the tollgates to grandmother's condominium we go"--Foster and Headly (1966). Yes, both the experiences and the vocabulary of today's young children differ greatly from the experiences and vocabulary of bygone days. But, we have to remember that the children themselves are not very different. Basically, today's five-year old have the same social, emotional, intellectual and physical urges and capabilities that young children had through the years.

There is, however a much wider range of capabilities within a group of kindergartners now than existed in generations past. Many of today's young children have attended nursery and preschool where they received their first school experiences. Those children that were not involved in any kind of training will have missed the social, emotional and physical development as their counterparts. As a result, the kindergartens must be ready to provide for the needs of all of its students.

There must be some training, remediation as well as individualized instruction. A three-hour half-day may not be enough time. It is believed, children should not be rushed through a three hour day for maximum progress. Lindberg and Willis (1967) states that kindergarten programs

that are too tightly structured and narrowly prescriptive often overwhelm the children. School should be a place where a child can, does and likes to learn, and our kindergartens should set the pace.

The purpose of all-day and half-day kindergarten are the same. Both strive to help children grow in cognitive, psychomotor, affective and linguistic skills. But it is believed, all-day kindergarten affords the time needed for a broad variety of learning experiences necessary to maximize the growth and development of each individual child.

Therefore, it would appear, today's kindergarten children with their diverse abilities and experiences need an all-day program that will focus on the children and provide them with more opportunities to develop responsibility for themselves and their actions. The program also allows flexibility and minimizes pressure caused by lack of time. In other words, the sum of the all-day experiences will enable children to live, learn and work happily and purposefully with others.

All children need to experience the excitement of learning while expanding their minds and developing their bodies. So, kindergarten education must provide for the

many differences found among children. A variety of steps that intervene must be developed if the school is to meet and provide for the differences in five year olds. Spodek and Robison (1965) knowing that children have these different learning styles and needs, indicates that schools must take into account these differences and develop curricula for children who learn at their own rate. According to Lawrence Jones, 1988 , children that were enrolled in an all-day kindergarten program showed that the additional time helped them overcome patterns of failure. In comparison to half-day kindergarten, the children in the all-day kindergarten have more time for the development of the whole child and will be involved in activities that might increase language and reading development and enhance those skills needed for first-grade.

A limited number of studies comparing the full-day, every day kindergarten with the half-day every day kindergarten have been done. The Bureau of Elementary and Scondary Education (DHEW/OE, ED 1980) focused on the full-day program as being advantageous because it offered more instructional time for students, more time for implementing special subjects (such as art, music and physical education)

in the curriculum and preparing children for the first grade better than other programs.

Kline and Winter (1970), comparing a half-day kindergarten and an extended day kindergarten for advantaged and disadvantaged students, found that the achievement of students in the extended-day program exceeded the achievement of the half-day students on the Stanford Primary Test Battery.

In a more recent study, Slaughter and Powers (1982-83) reported that students enrolled in an extended day kindergarten were found to have a more positive effect on the achievement of classroom performance as was measured by The Metropolitan Readiness Test and compared to students enrolled in the half-day program.

The need for an extended day seems to be evident, but more school administrators must receive more convincing evidence of what appears to be a growing need for five year old.

HYPOTHESIS

To provide additional evidence concerning this topic, a study was conducted on the hypothesis that children involved in a half-day kindergarten program would not

demonstrate greater reading achievement in the first grade when compared to those who have been involved in an all-day kindergarten program.

DEFINITIONS

For the purpose of this study, a half-day kindergarten program was defined as one in which the child attends school every day for three hours each day. The all-day kindergarten is one in which the child attends school every day for six hours each day and reading achievement was defined as attainment in any of a number of reading skills usually estimated by performance on some criterion measure such as formal or informal reading tests.

PROCEDURES

The research was conducted in the Newark Public Schools of the Central Ward which have an abundance of urban at risk students.

An all-day kindergarten program was piloted in eleven classrooms in eleven schools in Newark during the 1985-86 school year. Three additional classrooms in three additional schools were included in the pilot in the 1986-87 school year. Evaluations were made of the programs during those two years with positive results.

To assess long term effects of the all-day kindergarten program the 1989 C.T.B.S. (Comprehensive Test of Basic Skills) scores of first graders who had been all-day kindergarten students were compared with a control group sample of those who had been half-day students. This test was administered at the end of first grade. Only those students who remained in the same school and who had 1989 test scores were included in this assessment.

The test results were examined to determine differences, if any, between the samples. Both groups of children were instructed in the Macmillan Reading Series r and were given the first-grade CTBS Test after eight months of first grade.

Results

The total Reading scores of the Comprehensive Test of Basic Skills (CTBS) were studied to determine the relationship between first-graders who participated in a half-day kindergarten program compared to first-graders who participated in an all-day program. The mean scores and standard deviations were calculated for each group. A t was computed in order to establish if there were any significant differences between the mean achievement score of the two samples.

Table one illustrates these findings: The mean score

Table I

Total Reading on Comprehensive Test of Basic Skills (CTBS) at the end of first grade

Samples	M	SD	t	Sig.
Half-Day Kindergarten + N = 66	54.87	15.01	12.81	<.01
All-Day Kindergarten + N = 66	83.94	11.08		

of the half-day kindergarten sample was much lower than the mean score of all-day sample. Utilizing statistical tests to determine the significance of mean differences, a t of 12.81 was computed. This t indicates a highly significant difference between achievement of the samples. There is a very positive mean difference in favor of the all-day sample.

Conclusions

The findings of the study support the hypothesis that children involved in a half-day kindergarten would not

demonstrate greater reading achievement in the first-grade when compared to those who have participated in an all-day program. It would seem from the data that extending the day for kindergarten children has a very positive and statistically significant effect on first-grade reading achievement. This conclusion agrees with that of Adcock and others (1980) who completed a similar study.

A further study should be done to further assess the long-term effects of an all-day kindergarten program and to determine whether the positive showing of a extended day is not attributed to time only.

As a result of this study, it appears that an all-day kindergarten program might prove to be a great benefit to better achievement in reading in first-grade.

Half-Day Kindergarten Versus All-Day Kindergarten: Related Research

Our early kindergartens in the United States were based upon the kindergartens of Europe. We patterned our schools after the founder of the Kindergarten in Germany, Friedrich Froebel (1782-1852). He called the school children's garden because he believed that children were just like plants in a garden. He saw them as all being different, needing someone to cater to their own individual needs. Kindergartens began as all-day programs of education for five-year olds Gorton and Robinson, (1968). In the United States, it was customary for the youngest child in a rural one-room school to attend the same length of time as his siblings.

It was in the depression of the 30's, the second world war and the early postwar years that the attention of the American public was focused more sharply than every before on the needs of young children Foster and Headley, (1966). Research results in the area of child development were presented to the public through exhibits, films, radio programs, and popular articles. Federal programs were set up to provide for the welfare of young children. It was at this time that we received our WPA programs which established schools for nursery-school age children and later extended school services for older children. These programs were set up chiefly for the care of children whose mothers were employed in war-production plants.

This indicated that the changing pattern in our society called for a re-evaluation of the type of schools that we were providing for young children. It was in those years that the public in general and parents in particular gained new insights into the needs of young children and more adults became actively aware of the importance of early childhood education Shapiro, (1963).

The half-day program developed in response to the need to accommodate larger numbers of children and to reduce costs Gorton (1968). It appears that World War II influenced a cut-back from all-birth rate but also a shortage of classroom space. Since at this time, men were in the arm service and there was also a shortage of teachers.

In the 60's and 70's the all-day kindergarten reappeared. The U.S. Department of Health, Education, and Welfare reports that in the 1969-70 school year 13.8% of children enrolled in kindergarten were attending full-day Barker, (1971). Hawaii has established many of these programs which has all-day everyday kindergartens since 1955 Gorton (1968).

Many other countries in the world have all-day everyday schools for kindergarten age children. The British Infant School has all-day school for children ages

4 to 5. In Belgium, 90% of the children 3 to 5 years of age attend school from 8:30 to 4:15 Oelerich, (1979).

In France, children 2 to 5 years of age attend school for 6 hours per day, 23% of the two year-old, 70% of the fives are enrolled in these programs Tizard, (1976). Kindergarten programs in Russia are scheduled from 7:30 A.M. to 7:00 P.M. Weaver, (1971).

There is now much ferment in education. Educators are seeking ways to help all children reach their fullest potentials Willis (1967). Many persons are attempting to develop new organizational patterns and materials and to find new approaches to stimulating children's learning. Others are concerned with redefinition of goals and with investigations of ways in which new information about youth can be put to use. New knowledge about children's growth patterns and learning makes some of the old procedures seem cumbersome or unnecessary. Dynamic changes in our society have sparked new approaches to teaching, Barker, (1971).

One of the recent trends is an acceptance of the idea that some academic training could be started before first grade. Therefore, readiness programs have gradually been worked into many kindergarten curriculums. Half-day

kindergarten programs are deemed to be very inadequate in meeting the real needs of children. A full-day kindergarten is needed according to Gorton, (1969), and Jones, (1988) viewed full-day kindergarten as being essential to the implementation of more involved curriculum.

The full-day setting would provide time for more well-developed programs in language development, science, mathematics, social science, music and creative physical movement.

Many of these are included in the half-day programs, but time limitations make them very ineffective. The school lunch program was also seen as a learning experience which could be included in the full-day program. Even the flexibility of scheduling would be of value to the teacher and students in that it would allow for shorter but more frequent reinforcement of skills.

Oelerich, (1979) reported a set of long-range goals for full-day kindergarten that are worthy of note:

1. Provides opportunities for a better balanced less hurried day.
2. Allows teacher to give more individualized attention to the students.

3. Helps foster children's self-concept needs at an early age.
4. To develop creativity in children through a variety of experiences.
5. To develop conceptualization (to think, reason, classify, categorize and learn cause and effect relationships).
6. To give attention to the development of the whole child.
7. To maintain on ongoing evaluation to study the child and identify his strengths and weaknesses and work to enrich the child program and ensure progress in his weak areas.

The most important attempt in any kind of kindergarten program is to give the child of five an education which is appropriate to his stage of development, which will be immediately satisfying to him, and which will help him build good foundations for the years ahead Foster, (1959). In such an education, the child will develop all his powers - physical, mental, emotional and social. Obviously, we do not seek to give him all the information he needs now or in the future, but we do hope to help him develop the power to

meet new situations by showing him how to use the information he possesses and how to gain other information he may need. We must try through practice to help him develop skills in thinking. We should also be interested in discovering the traits and abilities of each child and in helping each child make the most of his potentials - always feeling a measure of success. In the all-day kindergarten, the teacher has the time to diagnose weaknesses and work to enrich the child's lesson prescriptions and build from his weaknesses. As a result, each child can truly experience success and develop positive attitudes about learning. This may reduce the constant need for remediation.

The teacher is the most important element in the make-up of the kindergarten. A review of Piaget's theory (Ginsberg and Opper, 1969) reported the importance of appropriate experiences as the child progressed through various stages of learning. Teachers must be aware that a child should be allowed the opportunity to "apply their intuitive understanding to subjects in school". So, the task of the teacher is a very demanding one, because she should be able to recognize a child's stages of learning in order to supply the appropriate learning experience.

An all-day kindergarten gives more time for individualized attention for identification of stages of intellectual development and making provision for the appropriate learning experiences.

Kindergarten teachers appear overwhelmingly to prefer a full-day kindergarten program to two half-day sessions (Ross, 1976). It is very difficult for a teacher to meet the needs and interest of two half-day classes daily. Many teachers felt that one class was not getting as much as the other. This effort to make each class equal caused physical and mental exhaustion.

(Mouw, 1965) reported that teachers that worked in a full-day kindergarten in the Rhinelander Public Schools were able to use the additional time for individualizing and found that teachers also favored the full-day program because of the increase of test results even tne number of students below average.

Johnson, (1974) was one of the persons who reported no significant differences in achievement between kindergartens in a full-day program and those in a half-day program, but the school decided on the continuation of the full-day because of the favorable response to the program from both parents and teachers.

Parents get a better chance to get involved in an all-day kindergarten. They no longer fear that school will replace the home (Hess an others, 1978). Winter and Klien, (1970, Alper and Wright, 1979) indicated in their study, that significant gains for children attending full-day programs for reasons of convenience. Arrangements for children's transportation, baby-sitting, and parents daily routine are all facilitated.

Now what about the child and his physical and psychological being in the all-day kindergarten? (Winter and Klein, 1970) found in their study that, there were no signs of fatigue, frustration, or waning of interest in school and Humphrey, (1980) examined attendance patterns and indicated no differences in absenteeism of children attending the full-day compared to the half-day program. A much higher percentage of children in the extended day program in Winter and Klein's study reported experiences of very positive feeling about school than the children in the half-day program.

Slaughter and other, (1983) conducted a study on the achievement of high risk kindergarten students in a Chapter I extended time kindergarten project. A total of 96 students identified as academically at risk were selected

to participate in an extended-day kindergarten class as well as the extended-day session, comparison students attended morning classes only. Additional instruction time for the high-risk students ranged from 119 to 242 hours, depending upon which of five participating schools the students attended. A pretest posttest design was used to compare gains on the listening subtest of the California Achievement Test, Part C. 33 students participated in five extended-day classrooms with gains made by 191 students in the same or similar school attended by half-day kindergarten classes. The program participants made statistically and educationally significant gains on standardized test and on teacher ratings of classroom performance.

Humphrey and others, (1980) reviewed the all-day kindergarten program of the Evansville - Vanderburgh School System. The purpose of the study was to present some findings relative to the benefits and effectiveness of total learning in full-day kindergarten as compared to the traditional half-day kindergarten program. The school system implemented and conducted a full-day pilot program during the second semester of the 1978-79 school year. The program continued through the 1979-80 full school year. Full-day

kindergarten children in four pilot schools (experimental group) and a random samplin, of half-day kindergarten children (control group) from schools containing the half-day kindergarten session participated in the study. It was hypothesized that children who attended the full-day kindergarten program would show greater growth in cognitive, psychomotor, affective, linguistic skills than those children who attended the, half-day kindergarten. To test this hypothesis, each child from both groups was administered three evaluation instruments. These were the California Achievement Tests, The Boehm Tests of Basic Concepts, and the Gates-Mac Ginitie Reading Tests. Personal interviews, questionnaires and observations were used to collect additional information from teachers and parents. In general results revealed that full-day kindergarten students scored significantly higher on the three tests; that most parents (91%) of the children who attended full-day kindergarten perferred the full-day; and that full-day kindergarten teachers have a favorable attitude about the full-day program.

A study was conducted to determine the academic effects of the length of school day on kindergarten children by Eugene Adcock and others (1980). 189 kindergarten children

both rural and urban communities in Maryland participated in this study. The study group consisted of 131 children from five classes who attended class for a full school day, and the control group consisted of 58 children from three classrooms who attended for the regular half-day program. Results indicated that the full-day program kindergarten children achieved significantly higher levels of academic skills than the half-day program children, as measured by the Survey Battery of the Metropolitan Achievement Tests, (1978). This test yielded one score in reading, mathematics, and language and the full-day achieved higher levels in all areas.

A study was conducted by Johnson, (1986-87) to evaluate the all-day kindergarten (ADK) program of Columbia (Ohio) Public Schools. A full-day of instruction was selected for underachieving kindergarten pupils. The program concentrated on preparing pupils for successful learning experiences in first grade by providing the children with an extra half-day on instruction. The program served 571 children, with 18 teachers providing daily instructions for two groups of students in 18 Chapter I eligible elementary schools. The groups were limited to 15 pupils and functioned during the school year, 1986-87. The students were given 130 hours

of instruction with emphasis on activities that would increase language and reading development to enhance the skills needed for success in first grade. For program evaluation purposes pretest posttest were administered. The Normal Curve Equivalent gains greatly exceeded the criterion of the programs original goals. Based on the evaluation results, a continuation of the program was recommended for the following school year.

According to survey data parents and teachers indicated that the full-day program is advantageous in many way. It allows for more instructional time for students, more time for implementing special subjects (art, music, physical education, etc...) and better prepares children for first grade than the other programs. It also allows children to be involved in all-school functions such as special assemblies and lunch programs.

There were, however, studies conducted by Hatcher, Schmidt and Cook (1979) which found no significant differences between the achievement of kindergarten attending a full-day and those attending a half-day program. Johnson (1974) also found no significant differences in the two programs.

During the Johnson study, two kindergarten classes consisting of twenty students each were evaluated using standardized test at three different times during the study. The results of the study showed no statistically significant differences in achievement levels of the two groups. Buy, Johnson stated that, "not all significant or valid goals of education are easily measurable, and it is quite conceivable that local conditions and certain specific goals might warrant a full-day kindergarten. (1974) It appears that in the studies where no growth was found in the all-day kindergarten programs was indicated that the programs were not geared to positive learning situations. Many were used as "extending baby-sitting time" which does not affect a child's achievement.

There has been growing public support for full-day kindergarten expressed by the National Association for the Education of Young Children. The American Federation of Teachers and the National Association of Kindergarten Teachers Hess and others, (1978). It has been recommended that expanded kindergarten be made an "integral" part of the public school's circulating. In June 1989, The Association of Early Childhood Educators of Newark, New Jersey submitted a resolution that a full-day kindergarten be available to

all children, organized flexibly to meet the needs of kindergarten children.

Foster and Headley (1966) states that: "The good kindergarten class in designed to meet the physical, social, emotional, and intellectual needs of its children. The curriculum must be geared to accommodate the varying rates of maturing among individuals. Parents and teachers should work together to provide that program which will best pace the educational challenge to the maturity level of the child. This must include the availability of a sound full-day kindergarten program.

As a result of this study, I found that kindergarten children enter school with many varying experiences and needs. So, today's kindergarten must be parpared to accommodate each child. Administrators should be aware that there will be a need for remediation of early learning problems as well as individualized instructions. An all-day kindergarten would give more time for this kind of instructions.

It is evident that one of the most positive and essential components of the all-day kindergarten, as compared to the half-day program, is extra time. It appears that present day kindergarten children, with their diverse

abilities and experiences, need a program to focus on the overlapping of basic skills. The all-day kindergarten allows for in-depth exploration of skills in the areas of social, emotional, physical, affective and cognitive development, (Humphrey). It seems to provide children with more opportunities to develop responsibility for themselves and others.

The literature constantly reminds us of the fact that children have varied maturational levels and experimental backgrounds. Therefore, it is the responsibility of the teacher with her kindergarten curriculm to determine each child's state of development and guide his/her progress accordingly. From this review, it is evident that administrators of a well-organized and properly run kindergarten with all-day classes would probably include the following as part of their philosophy. The program should:

1. give a child an excellent start on the road to a satisfying and productive total school life.
2. not only prepare the child for first grade, but occupy its own unique position in the child's school experiences.
3. Foster or build a child s self-concept needs at an early age, sensing that a feeling of worth and

belonging developed in early childhood promotes security in coping with problems encountered.

4. provide the kindergarten child with many varied experiences - exposure without pressure being present in the atmosphere of the kindergarten room.
5. leave the kindergartener happily anticipating the next step in the learning process because of the tremendously fulfilling experiences.
6. enable the child to live and work joyfully and purposefully with others, begin to understand the world around him/her and develop as a worthy and useful human being. These are some of the arguments that I recall about the advantages of the all-day kindergarten program which is deemed to be the best one to allow for flexibility and minimizes "pressure" caused by lack of time.

Then, why don't we have more all-day kindergartens? It appears that more studies need to be made to give the positive evidence of the need for the extended day. Administrators must be made aware of the fact that children have different learning styles and they require programs

which take into account these differences. Schools need to develop curricula for children who develop at different rates. Board of Educations everywhere should do everything possible to help all children. Establishing more all-day kindergartens may be a way to accommodate every child and his learning styles and give him/her a chance to have a measure of success.

The research appears to, indicate that the availability of more all-day kindergartens may help to maximize the growth and development of each individual child and give him/her a head-start for first grade.

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APPENDIX

CTBS Scores of All-Day Kindergarten Sample

92	74
91	88
84	91
90	88
79	98
96	91
71	91
84	98
96	71
79	72
58	63
65	71
68	77
63	99
76	85
80	91
99	92
89	97
89	89
91	85
96	85
92	75
91	96
91	97
99	93
86	86
74	88
79	84
63	65
88	91

All-Day Sample Scores Continued

96	72
76	63
79	96

CTBS Scores of Half-Day Kindergarten Sample

39	29
65	68
24	49
50	62
67	43
39	49
52	26
43	65
34	28
62	55
29	41
74	40
59	53
76	62
79	65
63	75
77	56
73	49
41	69
28	54
80	72
68	49
65	59
74	62
81	29
50	67
62	70
68	49

Half-Day Sample Scores Continued

65	46
52	46
59	45
58	38
46	42
62	